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N 2168735. Abstract

The invention relates to the art of microelectronics and is intended to be used for inspection for quality according to predetermined levels of stability or reliability. The method includes the following steps:

a representative "educating" sample for each of the quality inspection types is formed from among an article lot to be inspected;

said sample is subjected to an irradiation of a small dose to cause a significant change in at least of two parameters stated in a specification or in additional conditions;

distribution of the lot articles according to a degree of a change in parameters caused by the irradiation is derived;

the sample is annealed to improve the parameters and tested for radiation resistance to obtain not less that 50% of failures - in case of the inspection of a tested lot for radiation resistance;

the sample is tested for the median service life, or during a time required for first failure to occur, or during a time necessary to determine a required service life - in the case of inspection of a tested lot for reliability;

the sample is tested for reliability when being subjected to the combined action of irradiation, thermal and electrical loads to obtain not less than 50% of failures - in the case of inspection of a tested lot regarding the levels of first failure occurrence under the conditions of the combined action of destabilizing factors. The technical result of the method consists in that said method provides a possibility to select the most radiation-resistant and reliable instruments having guaranteed performance in respect of stability and reliability, 1,5-2 times exceeding the medium indices of operation until failure, and by half order or one order exceeding the mean indices in respect of stability. The method is easy to be carried out and does not affect the operation characteristics of tested articles. 11 figs.